

ABSTRACT OF THE DISCLOSURE

To provide a method of manufacturing silicon carbide by forming silicon carbide on a substrate surface from an atmosphere containing a silicon carbide feedstock gas comprising at least a silicon source gas and a carbon source gas under condition 1 or 2 below:

Condition 1: the partial pressure p_s of silicon source gas is constant (with $p_s > 0$), the partial pressure of carbon source gas consists of a state p_{c1} and a state p_{c2} that are repeated in alternating fashion, wherein p_{c1} and p_{c2} denote partial pressures of carbon source gas, $p_{c1} > p_{c2}$, and p_{c1}/p_s falls within a range of 1-10 times the attachment coefficient ratio (S_s/S_c), p_{c2}/p_s falls within a range of less than one time S_s/S_c ;

Condition 2: the partial pressure p_c of carbon source gas is constant (with $p_c > 0$), the partial pressure of silicon source gas consists of a state p_{s1} and a state p_{s2} that are repeated in alternating fashion, wherein p_{s1} and p_{s2} denote partial pressures of silicon source gas, $p_{s1} < p_{s2}$, and p_c/p_{s1} falls within a range of 1-10 times S_s/S_c , p_c/p_{s2} falls within a range of less than one time S_s/S_c .